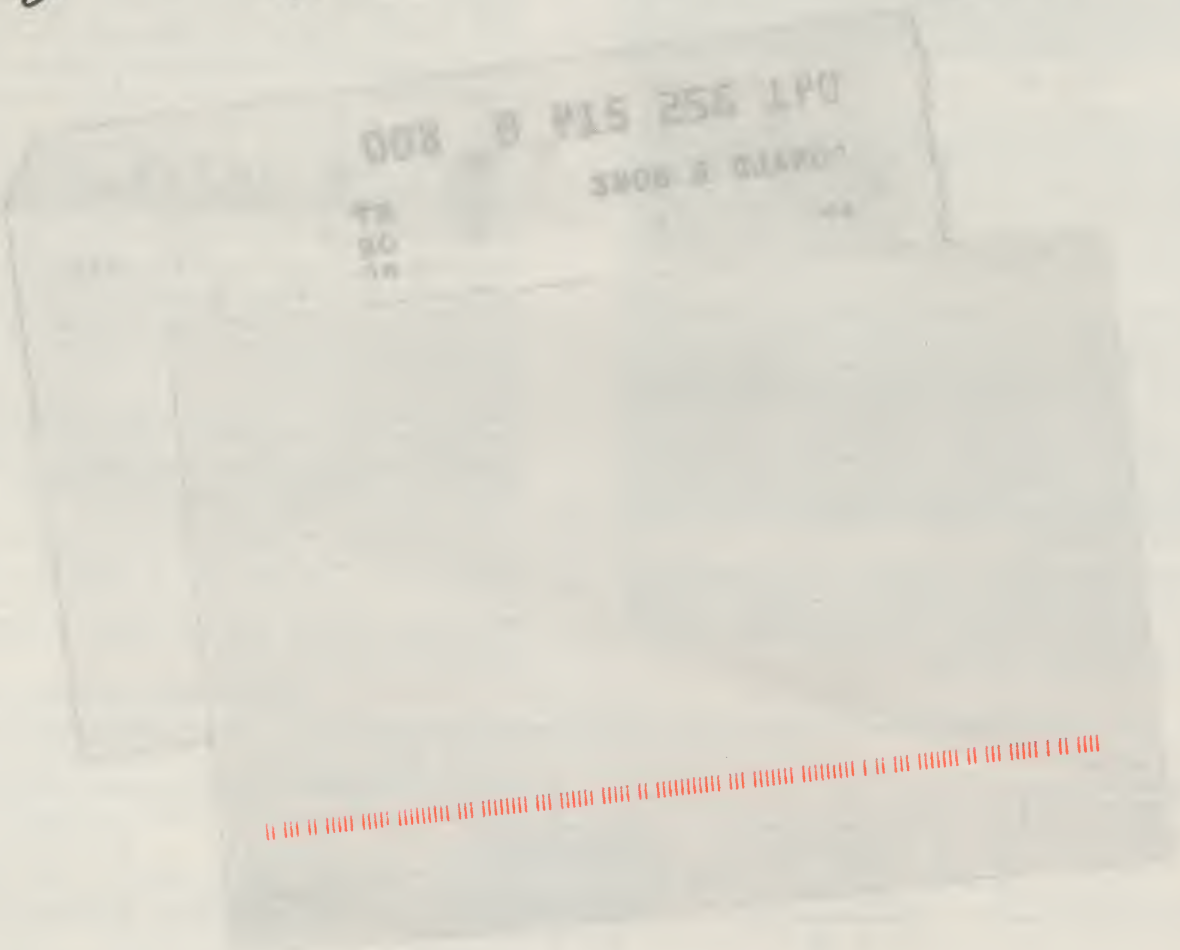
Ink-Jet Printer

# RETAIL CREDIT CARD BILLING WITHOUT PUNCHED CARDS



RECOGNITION EQUIPMENT Incorporated

## RETAIL CREDIT CARD BILLING WITHOUT PUNCHED CARDS

The Electronic Retina* Computing Reader, used in conjunction with Recognition Equipment's new Ink-Jet Printer and Bar Code Reader/Sorter, achieves a major innovation in the credit card industry—*Retail Credit Card Billing Without Punched Cards*. The equipment performs all the functions of many types of unit-record machines during a single operation. It replaces optical scanners, card sorters, card proving machines, and peripheral card-to-tape computers. This consolidation results in earlier and better accounting control, increased throughput, substantially lower operating costs, and improved cash flow.

During an initial data entry step, the Electronic Retina Computing Reader optically reads information from charge tickets and dealer summaries, edits the data and checks it for validity, balances amounts, sorts the documents by billing cycle, records data on the magnetic tape for statement preparation and other processing, and produces an audit listing showing every item.

At the same time, the Ink-Jet Printer encodes the documents with a fluorescent bar code for further sorting. Encoded charges for the current billing cycle are available immediately after this single pass.

When statements have been generated, they also are encoded by the Ink-Jet Printer, and statements and charges are then sorted together on the Bar Code Reader/Sorter.

The flow chart below outlines a recommended system using this equipment. The benefits of this method, which is unique to Recognition Equipment's technology, include:

**Improved Cash Flow.** By reducing the time required to process charges through to the billing file, and from the billing file into the mail, an accelerated receipt of payments is created. This permanently increases the company's cash position by approximately one days' sales for each day that processing time is reduced.

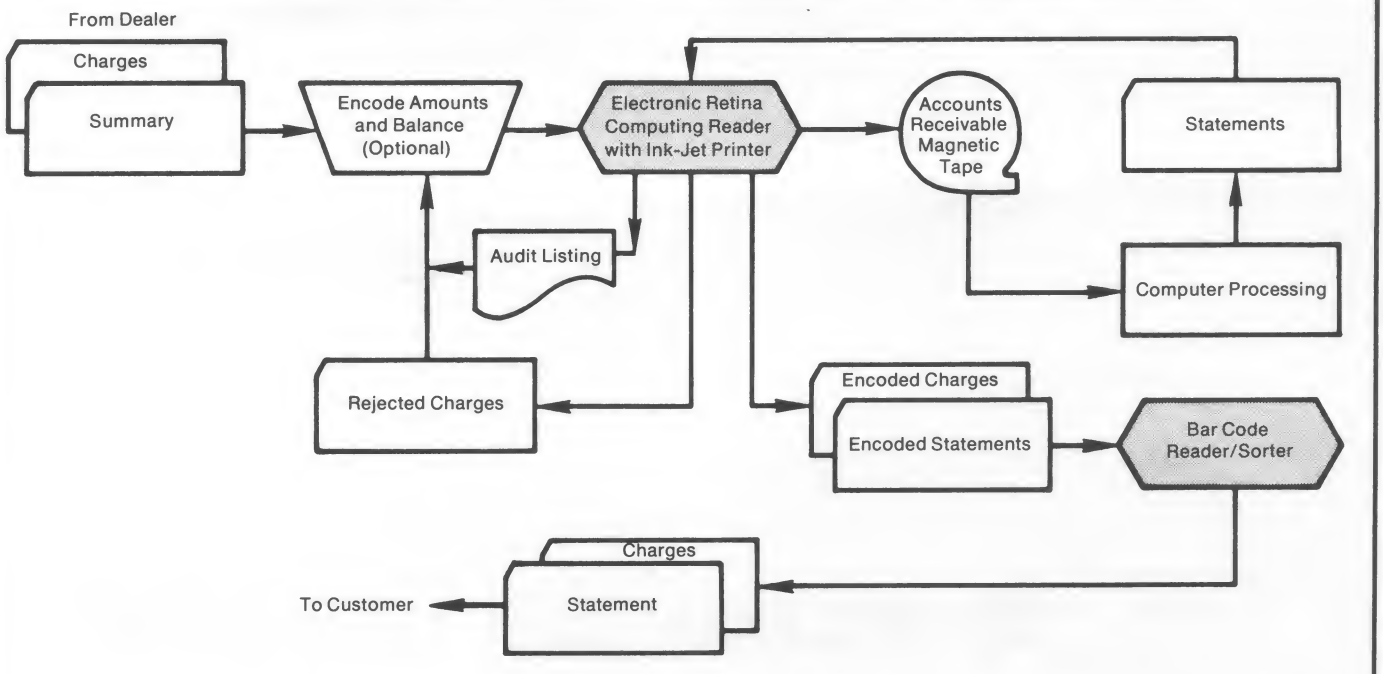
**Improved Control.** By consolidating a number of different operations into a single reading pass, the need for control balances at various stages of processing is eliminated.

**Reduced Personnel and Elimination of Punched Card Equipment and Peripheral Computers.** The consolidation of operations virtually eliminates the need for punched-card tabulating equipment, peripheral computers, and the associated operating and supervisory personnel. In addition, greater reading reliability substantially reduces the personnel required for mistake correction and reentry.

**Reduced Forms Set and Mailing Costs.** The use of ordinary paper instead of card stock reduces forms set costs by $1.00 to $1.50 per thousand and, for all practical purposes, eliminates excess postage on monthly statements.

**Fraud Detection.** Fraudulent items can be detected immediately after the initial reading pass by comparing the magnetic tape produced against a master tape of lost or stolen account numbers.

*Electronic Retina is a trademark of Recognition Equipment Incorporated.




**CONTROLLED SELECTION OF PRIORITY BILLING CYCLES**

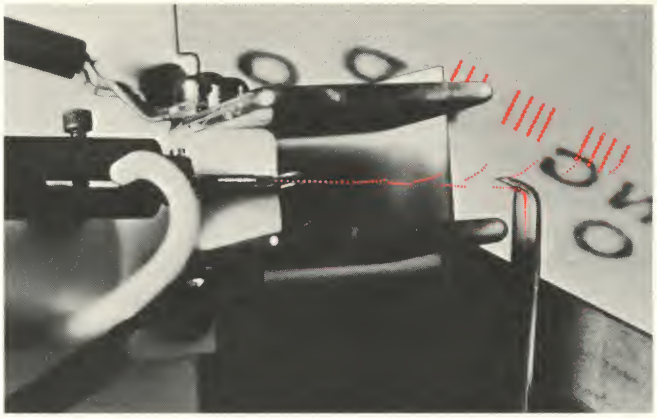
## The Ink-Jet Printer

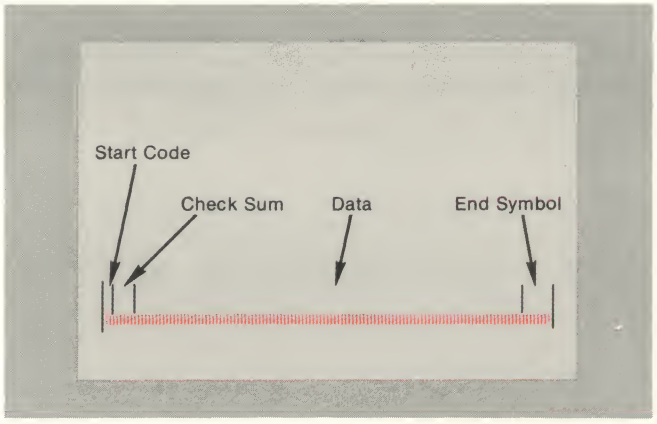
Available as an optional feature on the Document Carrier of Recognition Equipment's Electronic Retina Computing Reader, the Ink-Jet Printer selectively encodes documents with a bar code representing the alphabetic or numeric information read from them at speeds up to 1200 documents per minute.

The Printer has no moving parts to wear out or need adjusting. Pressurized fluorescent ink flows steadily through a precision ground, glass nozzle. As the jet stream of ink leaves the nozzle, it breaks up into 48,000 drops every second. A piezoelectric vibrator insures that the drops are of uniform size and mass, only a few thousandths of an inch in diameter. In an 8-hour day, the Printer consumes less than a pint of ink.

When the Printer receives a command from the Programmed Controller to print a bar, a precisely controlled, variable electrical charge is applied to each drop of ink. As the drops move through a constant electrical field, they are deflected upward in proportion to the charge they carry (see high-speed photograph at right) and form a straight line.

Because the Ink-Jet Printer operates under the control of a stored-program computer, it performs a read-after-write check each time a bar is printed. These bars form a 30-bit-per-inch code that can represent any alphabetic or numeric information that has been read by the Electronic Retina Computing Reader. The code structure contains start and stop symbols and a bifolded check sum for verification. Position of the code can be manually adjusted to within ¼ inch from the top or bottom of documents.






The fluorescent ink stands out in sharp contrast to the background on which it is printed. (Hold this brochure under an ultraviolet light source).

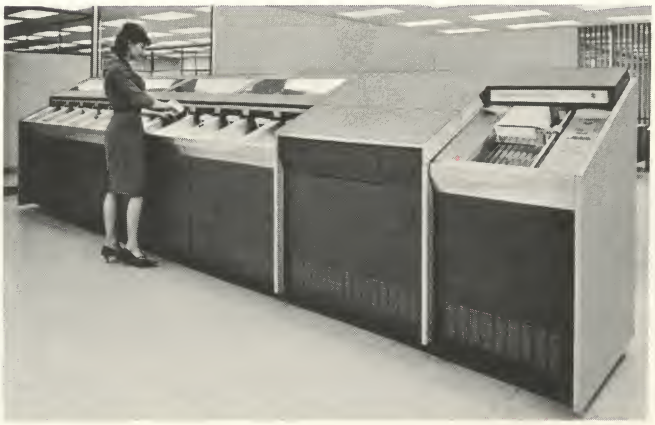
## The Bar Code Reader/Sorter

The Bar Code Reader/Sorter is an independent system that reads and sorts ordinary paper documents that have been encoded by the Ink-Jet Printer. This system provides an extremely reliable sorting capability.

Each Bar Code Reader/Sorter includes a Programmed Controller, which is a third generation, general-purpose computer, and one or two document transports. These transports are available in two versions with speeds up to 1200 documents per minute or up to 2400 documents per minute. A Reader/Sorter with two high-speed transports can have an effective throughput rate as high as 4800 documents per minute.

Using a combination of vacuums and air pressure, the Bar Code Reader/Sorter processes documents that have been crumpled, stapled, dog-eared, or torn. The documents can range in size from 3¼ by 3¼ inches to 5 by 8¾ inches and in weight from 12-pound paper to heavy card stock.

As the paper documents move through the Bar Code Reader/Sorter at speeds up to 400 inches per second, they pass a reading station with an ultraviolet light source. The Reader/Sorter reads and interprets fluorescent bar codes at rates up to 12,000 bits per second and, under program control, selects the proper output pocket for each document.



## The Electronic Retina Computing Reader

The Electronic Retina Computing Reader is a general-purpose optical character recognition system capable of reading information in a variety of intermixed, standard type styles and from a wide range of sizes and weights of paper documents. Its unique Electronic Retina, which reads like the human eye, enables it to see whole characters at a time and recognize shades of grey.

The system includes a Programmed Controller, a general-purpose digital computer, that exercises real-time control over the entire system and performs on-line data processing. Output media available includes Magnetic Tape Units, high-speed Line Printers, and a variety of other peripheral devices.

The photograph at the right shows a system equipped with a Document Carrier that handles intermixed unit-record documents at speeds ranging from 600 to 1200 documents per minute, reading one or two lines from each document. As the documents are read, they can be sorted into any one of up to 12 output stackers. A Rapid Index Page Carrier is also available.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PRINTED IN U.S.A.

Remember Ink-Jet Printers
of Teletype, Inc.;
which is apparently not the
same as that offered by
Recognition, Inc.

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July 14, 1967

Mr. T. Nelsons
Box 1546
Poughkeepsie, New York 12603

Dear Mr. Nelsons:

Thank you for your interest in our new Ink-Jet Printer and Bar Code Reader/Sorter. Enclosed is a brochure that briefly describes these products and discusses one of the applications areas in which they offer substantial economic benefits.

These two Recognition Equipment developments, used in conjunction with our Electronic Retina Computing Reader, provide the first economical way to sort large volumes of ordinary paper documents at very high speeds.

The Ink-Jet Printer, which is available as an optional feature on the Document Carrier portion of the Electronic Retina Computing Reader, has a purchase price of $160,000 and leases for about $3400 to $4400 per month. The Bar Code Reader/Sorter has a purchase price range of approximately $200,000 to $500,000 and a monthly lease range of approximately $5400 to $17,000, depending on the number and speed of paper transports included.

If you would like additional information, please contact the appropriate regional office listed below.

Sincerely,

Ed Wattenbarger

Ed Wattenbarger, Director
Business Communications

pt

Enclosure

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